

ON A COLLECTION OF FISH FROM LOWER BURMA.

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Mr. K. Biswas, Curator of the Herbarium, Royal Botanical Gardens, Bengal, made two collections of fish from the Kyenchaung river in the Mergui district, Lower Burma, during his tours in the Cinchona Reserve in May, 1930, and in February, 1931. The entire collection, which has been presented to the Zoological Survey of India, is of considerable interest in that it is from a river the fish fauna of which has not been studied previously and includes several interesting species.

The first part of Mr. Biswas's collection has already been reported on by Dr. S. L. Hora.¹ The second lot which forms the basis of this paper consists of seven species, *viz.*, *Glyptothorax prashadi*, sp. nov., *Mastacembelus oatessi* Blgr., *Botia histrio* Blyth, *Pristolepis fasciatus* (Bleek.), *Crossochilus latius* (Ham. Buch.), *Mystacoleucus marginatus* (Cuv. & Val.) and *Osteochilus vittatus* (Cuv. & Val.) Bleek. The fishes are in excellent state of preservation, though unfortunately all the species are represented by single specimens.

The genus *Mystacoleucus* and the form *Osteochilus vittatus* were hitherto known chiefly from the Indo-Australian waters and their occurrence in Lower Burma is recorded here for the first time. Similar distributions of genera and species of fresh-water fishes in Lower Burma and in the Archipelago, although not very rare, are of considerable interest in connection with our knowledge of the geographical distribution of these fishes.

My sincere thanks are due to Dr. S. L. Hora for kindly handing over the present collection to me for study and to Dr. B. Prashad, Superintendent, Zoological Survey of India, for his kindness in reading through the manuscript. I have also to record my thanks to Mr. R. C. Bagchi who prepared the accompanying illustrations.

***Glyptothorax prashadi*, sp. nov.**

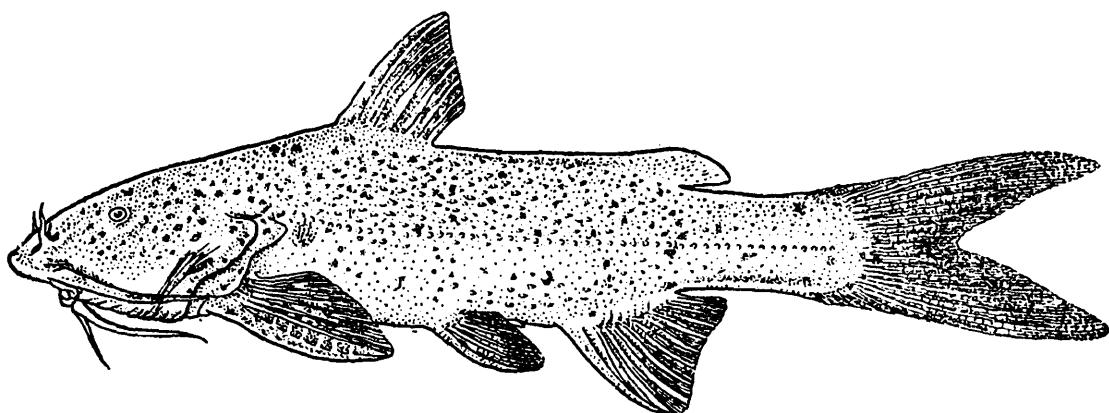
D. 1/6 ; A. 3/10 ; P. 1/7 ; V 1/5 ; C. 17 (excluding the small compact outermost rays on either side).

The head is longer than broad and nearly twice as broad as deep. Its length is contained almost 3.6 times and the depth of the body about 4.3 times in the length of the body excluding the caudal fin. The snout is broadly rounded anteriorly and is very slightly longer than the postorbital part of the head. The eyes are small and situated nearly in the middle of the head. The interorbital space is concave in the middle and is about half as wide as the length of the snout (Fig. 1).

The nasal barbels do not extend to the anterior margin of the eyes and are $\frac{2}{3}$ as long as the distance between their bases and the anterior

¹ Hora, S. L.—Notes on Fishes in the Indian Museum, XVIII. 'On two small collections of Fishes from Burma'. *Rec. Ind. Mus.*, XXXIII, pp. 1-2, figs. 1, 2 (1931).

margin of the eyes. The maxillary pair reach to the base of the pectoral spine or extend slightly beyond it. The outer mandibulars just reach the base of the pectoral spine, while the inner ones are much shorter. The gape of the mouth is rather wide and is equal to the length of the head behind the middle of the eyes. The upper jaw is longer than the lower one. The lips are moderately fleshy and are very finely papillated. The adhesive apparatus on the chest is fairly well-developed and its length is about one and a half times its breadth ; there is no depression in its centre.



TEXT-FIG. 1. Lateral view of *Glyptothorax prashadi*, sp. nov., \times ca 2.

The dorsal fin is inserted midway between the tip of the snout and the middle of the adipose dorsal ; it is not so high as the depth of the body below it. Its last osseous ray is faintly serrated at the posterior border. The outer margin of the fin is truncate. The length of the base of the adipose dorsal is contained 1.5 times in the length of the distance between its anterior margin and the posterior end of the base of the rayed dorsal. The pectorals are not pleated below and are as long as the length of the head behind the base of the nasal barbels ; they do not extend to the origin of the ventrals. The outer margins of the ventrals are more or less rounded, and when flattened they reach the anal ; the latter is almost as high as the dorsal and has slightly concave outer margin. The caudal fin is longer than the length of the head and its own height.

The skin is covered with cone-shaped sharp prickles, arranged rather irregularly and directed tailwards. The portion of the body below and behind the dorsal fin and above the insertion of the lateral line is somewhat thickly covered with these prickly structures.

The colouration of the fish in alcohol is dark brownish with a few black spots irregularly scattered all over the body and the fin membranes. The abdominal portion is yellowish white. The fins are darkish.

Relationships and Remarks : The species is allied to *G. dorsalis* Vinci-guerra¹ and *G. minutus* Hora² reported from Burma and Assam, and Assam respectively and appears to be intermediate between the two species. *G. prashadi* differs from *G. dorsalis* chiefly in the composition

¹ Vinci-guerra, D.—‘Viaggio Di Leonardo Fea in Birmania e Regioni Vicine, Pesci.’ *Ann. Mus. Civ. Stor. Nat. Genova*, (2) IX (1890).

² Hora, S. L.—‘Fish and Fisheries of Manipur with some observations on those of the Naga Hills.’ *Rec. Ind. Mus.*, XXII, pp. 165-214, pls. ix-xii (1921).

of the pectoral fins ($1/7$ versus $1/10$) and in the shape of the head and snout, while from *G. minutus* it differs in larger size and body proportions. Hora's description of *G. minutus* is unfortunately very brief and the specimens of the species cannot be traced in the collections of the Zoological Survey of India ; it is, therefore, not possible to compare in detail the relationships of the Kyenchaung river form with *G. minutus*.

Measurements in millimetres.

Length of body without caudal	52.0
Height of body	12.0
Length of head	14.5
Depth of head	9.0
Width of head	13.0
Length of snout	7.25
Diameter of eyes	1.75
Interorbital width	4.0
Length of caudal peduncle	9.0
Height of dorsal fin	8.5
Length of pectoral fin	10.0
Length of ventral fin	7.0
Length of caudal fin	14.0

***Botia histrio* Blyth.**

The specimen is 105 mm. long excluding the caudal fin. It has nine very distinct oblique black bands across the body.

***Pristolepis fasciatus* (Bleek.).**

Besides the abnormal young specimen from Prome, which was referred to this species by Day,¹ there is a young specimen in the collection of the Zoological Survey of India collected by Dr. Malcolm A. Smith from Bangkok, Siam, with 12 dorsal spines instead of 13. In other specimens of the species from different localities in Burma and Siam, I find that the bifurcation of both the superior and the inferior opercular spines is very variable. Vinciguerra (*op. cit.* pp. 167, 168) rightly remarked that the character of the opercular spines cannot be considered as having any specific value.

There are about eight obliquely parallel black bands across the body of the Kyenchaung river specimen. Its length excluding the caudal fin is 105 mm.

***Crossochilus latius* (Ham. Buch.).**

The specimen is 150 mm. long excluding the caudal fin. The species is very variable in respect to the shape of the head and body and lepidosis. The Burmese forms are narrower than those from India. The specimen under report agrees in all respects with Vinciguerra's description (*op. cit.* pp. 280, 281).

¹ Day, F.—*Fishes of India* (1876).

Mystacoleucus Günther.

Mystacoleucus is essentially an Indo-Australian genus. Recently its range has been extended by Smith¹ to Siam where *M. marginatus* (Cuv. & Val.) "is a common, widely distributed species ranging over almost the entire length of the country from north to south." In 1919, Oshima² created a genus, *Spinibarbus* from Formosa which is closely allied to *Mystacoleucus*, but differs from it in having (i) "unserrated dorsal spine," (ii) "a less number of divided anal rays" (5 against 9) and (iii) "pharyngeal teeth of 5-3-2—2-3-5 instead of 4-3-2—2-3-4," etc. Subsequently in 1926 he³ described another Formosan genus, *Spinibarbichthys* which differs from *Spinibarbus* chiefly in having the dorsal spine serrated like *Mystacoleucus*. In the same year Rendahl⁴ described a species from China as *Mystacoleucus mandarinus* which appears to be closely allied to Oshima's *Spinibarbus hollandi*, and differs from it mainly in having the number and the arrangement of the pharyngeal teeth like those in *Mystacoleucus*. In view of these affinities of *Spinibarbus* and *Spinibarbichthys* with *Mystacoleucus*, Rendahl⁵ in 1928 proposed to consider Oshima's genera as subgenera of *Mystacoleucus* which differ in the nature of the last osseous spine of the dorsal fin and the number of the branched rays of the anal. In the state of our present knowledge, however, of the genera *Mystacoleucus*, *Spinibarbus* and *Spinibarbichthys*, the acceptance of Rendahl's scheme of classification is rather difficult. The characteristics of the three genera under consideration and of the species *M. mandarinus* are tabulated below:—

<i>Mystacoleucus.</i>	<i>Spinibarbus.</i>	<i>Spinibarbichthys.</i>	<i>M. mandarinus.</i>
1. Dorsal opposite to origin of ventrals.	Dorsal in advance of ventrals.	Dorsal in advance of ventrals.
2. Dorsal spine serrated behind.	Dorsal spine simple behind.	Dorsal spine serrated behind.	Dorsal spine simple behind.
3. Anal with 8—9 branched rays.	Anal with 5 branched rays.	Anal with 5 branched rays.	Anal with 5 branched rays.
4. Ph. teeth 4-3-2—2-3-4.	Ph. teeth 5-3-2—2-3-5.	Ph. teeth 4-3-2—2-3-4.

It is clear from the above table that *Spinibarbus* is sufficiently distinct from *Mystacoleucus* and it cannot be considered a natural subgenus of the latter. Unfortunately I have no access to the original description of *Spinibarbichthys* and the two characters noted in the table are taken

¹ Smith, H. M.—'Notes on Siamese Fishes.' *Journ. Siam Soc. Nat. Hist. Suppl.*, VIII, No. 3, pp. 177-190 (1931).

² Oshima, M.—'Contributions to the Study of the Freshwater Fishes of the Island Formosa.' *Ann. Carnegie Mus.*, XII, pp. 169-328, pls. xlviii-lxxii (1919).

³ Oshima, M.—'Notes on a Collection of Fishes from Hainan,' etc. *Annot. Zool. Japon.*, XI, pp. 1-25 (1926).

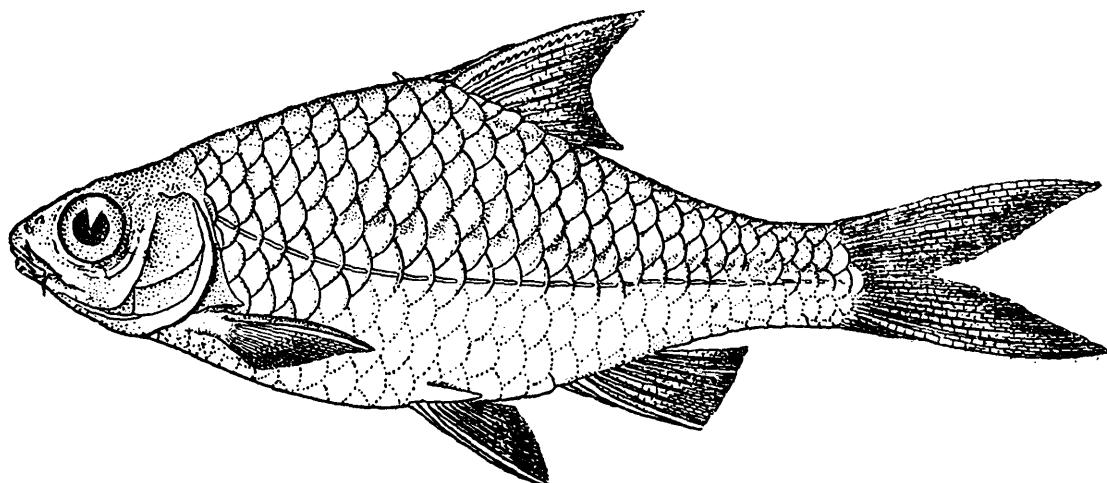
⁴ Rendahl, H.—'Mystacoleucus mandarinus eine neue Barbi aus China nebst einigen Bemerkungen über die Gattung Spinibarbus Oshima.' *Arkiv. f. Zool.*, XVIII (B) 11, pp. 1-3, (1926).

⁵ Rendahl, H.—'Beiträge zur Kenntnis der Chinesischen Süßwasser Fische.' *Arkiv. f. Zool.*, XX (A) 1, pp. 1-194 (1928).

from Rendahl's account. It is, therefore, not possible to indicate its relationships with either *Mystacoleucus* or *Spinibarbus*. In view of the character of the anal rays, *Spinibarbichthys*, however, cannot be considered a subgenus of *Mystacoleucus*. In regard to the form *M. mandarinus*, it seems hardly possible to refer it to the genus *Mystacoleucus* without making allowance for such dissimilar characters as are tabulated above. I am inclined to hold,¹ therefore, that Rendahl's species from China should be referred to the genus *Spinibarbus* and not to *Mystacoleucus*, while Oshima's *Spinibarbus* should be maintained as a distinct genus. *Spinibarbichthys* may ultimately prove to be congeneric with *Spinibarbus*.

***Mystacoleucus marginatus* (Cuv. & Val.).**

A specimen of the species about 75 mm. long from the Kyenchaung river is the first record of the occurrence of *Mystacoleucus* in Lower Burma. The specimen agrees in all essential details with the description of the species given by Weber and de Beaufort² and does not call for any special remarks. The following additional notes based on examination of the Burmese form and a Siamese specimen³ may, however, prove useful. So far as I am aware, no good figure of *M. marginatus* is available except for the one published by Bleeker⁴ in his *Atlas* under the name *Puntius (Barbodes) obtusirostris*; but since this figure does not agree with the specimens before me, a figure of the side view of the Burmese example is reproduced here (Fig. 2).



TEXT-FIG. 2. Lateral view of *Mystacoleucus marginatus* from Burma. Slightly enlarged.

The eyes are more anteriorly situated than in the middle of the head. The pores on the snout are not discernible. The insertion of

¹ Just before sending this note to the press Dr. G. S. Myers' paper 'On the Fishes described by Koller from Hainan' etc. (*Lingnan Sci. Journ., China*, X, Nos. 2 & 3, pp. 255-262, 1931) was available for reference. Dr. Myers has briefly discussed the points under consideration and his views are in agreement with those of mine.

² Weber, M. and de Beaufort, L. F.—*Fishes of the Indo-Australian Archipelago*, III (1916).

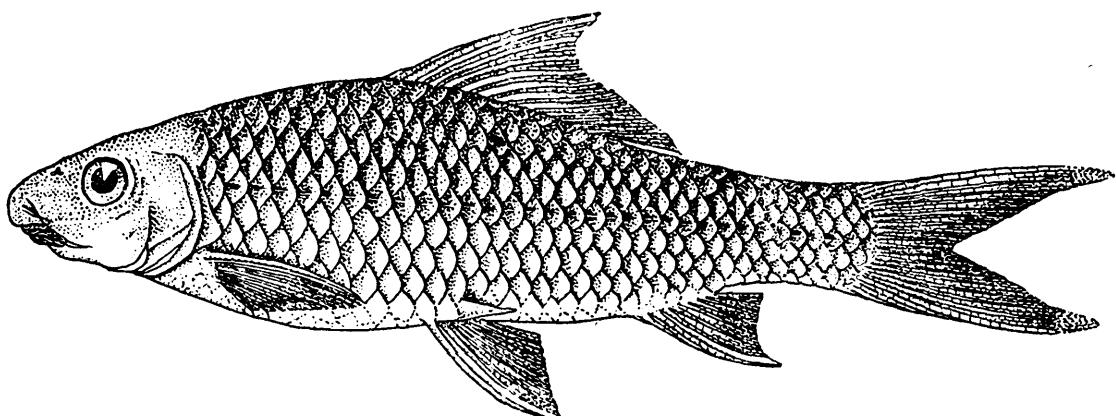
³ Dr. Hugh M. Smith, Adviser, Fisheries Department, Bangkok, Siam, has very kindly presented a specimen to the Zoological Survey of India, out of a fine series collected by him at Klong Tadi in Siam.

⁴ Bleeker, P.—*Atlas Ichth. Cypr.*, III (1863).

the dorsal fin is nearer the tip of the snout than to the base of the caudal fin. It is as high as the body below it up to the level of the lateral line. It has a moderately concave margin ; in young specimens the concavity is more pronounced than in a full-grown individual. In the Burmese specimen the procumbent spine projects outwards and pierces the first predorsal scale, while in the specimen from Siam it lies hidden below the scales and pierces the third scale. In the Burmese specimen the ventral fins reach the opening of the vent, which is situated just in front of the insertion of the anal fin, while in Siamese example, which is nearly twice the size of the Burmese individual, the ventrals are separated from the vent by about two scales. The pectoral fins are shorter than the length of the head.

Osteochilus vittatus (Cuv. & Val.) Bleek.

This species has so far been recorded from Sumatra, Java, Borneo, Malacca and Tonkin in Indo-China. Its occurrence in Burmese waters is recorded here for the first time. The specimen collected by Mr. Biswas from the Kyenchaung river is 118 mm. long excluding the caudal fin.



TEXT-FIG. 3. Lateral view of *Osteochilus vittatus* from Burma. \times ca $\frac{3}{4}$.

For confirmation of its identity the specimen under report was sent to Dr. L. F. de Beaufort of the Amsterdam Museum, Holland, who very kindly informed me : "I have compared it with specimens of the same length of *O. vittatus* from Sumatra and come to the conclusion that your specimen certainly belongs to that species. The occurrence of the same species of freshwater fish in Lower Burma and in the Indo-Australian Archipelago is not so rare "

The specimen corresponds in every detail with the description of the species in the *Fishes of the Indo-Australian Archipelago*. I publish a figure of the lateral view of the Burmese specimen as it differs from Bleeker's figure of *Rohita (Rohita) vittata*.¹

¹ It may be pointed out here that there is an error in respect of reference to the figure of *Rohita (Rohita) vittata* in Bleeker's *Atlas*. In the text (p. 68) reference is made to " Atl. Tab. CXVIII, fig. 2, Cypr. Tab. XVII, fig. 2 " which is an illustration of *Rasbora lateristriata* Bleeker. The correct reference to the figure in question is " Atl. Tab. CXIII, fig. 2, Cypr. Tab. XII, fig. 2 " as given in the Index.